DIGITAL PIXELS

DRAWER 20a

UNCONVENTIONAL MATERIALS

71.2009.085.05810

Portrayals of Abraham Lincoln

Digital Pixels

Excerpts from newspapers and other sources

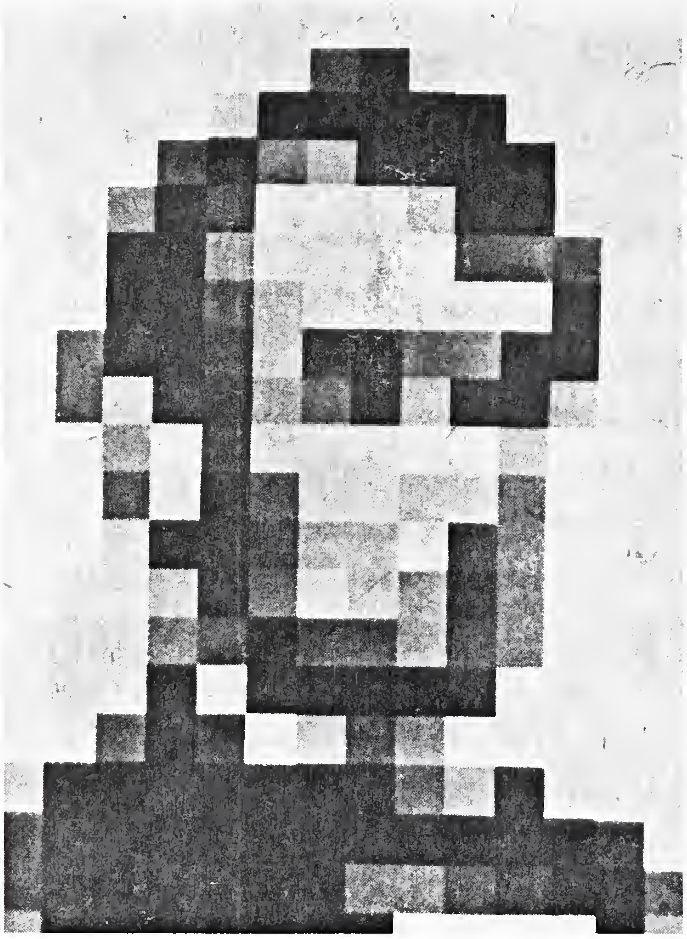
From the files of the

Lincoln Financial Foundation Collection

71.2009.085.05810

MY WEEKLY READER -- NEWS READER
THE CHILDREN'S NEWSPAPER

March 3, 1971
Edition 2 . Issue 21



Who Is It?

Squares and squares and squares—black and white and gray squares.

What picture do the squares make?

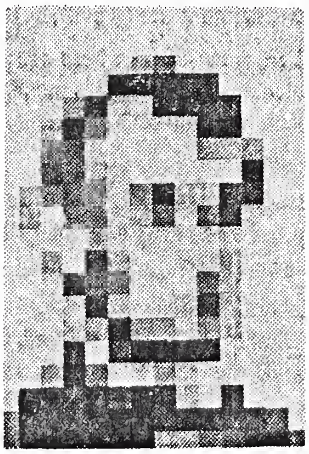
Walk away from the picture.
Look at it again.
Do you see the head of a man?

It is the picture of a great man.
He was a President of the U.S.
His picture is on a five dollar bill.

Chicago Daily News April 12, 1971

* * *

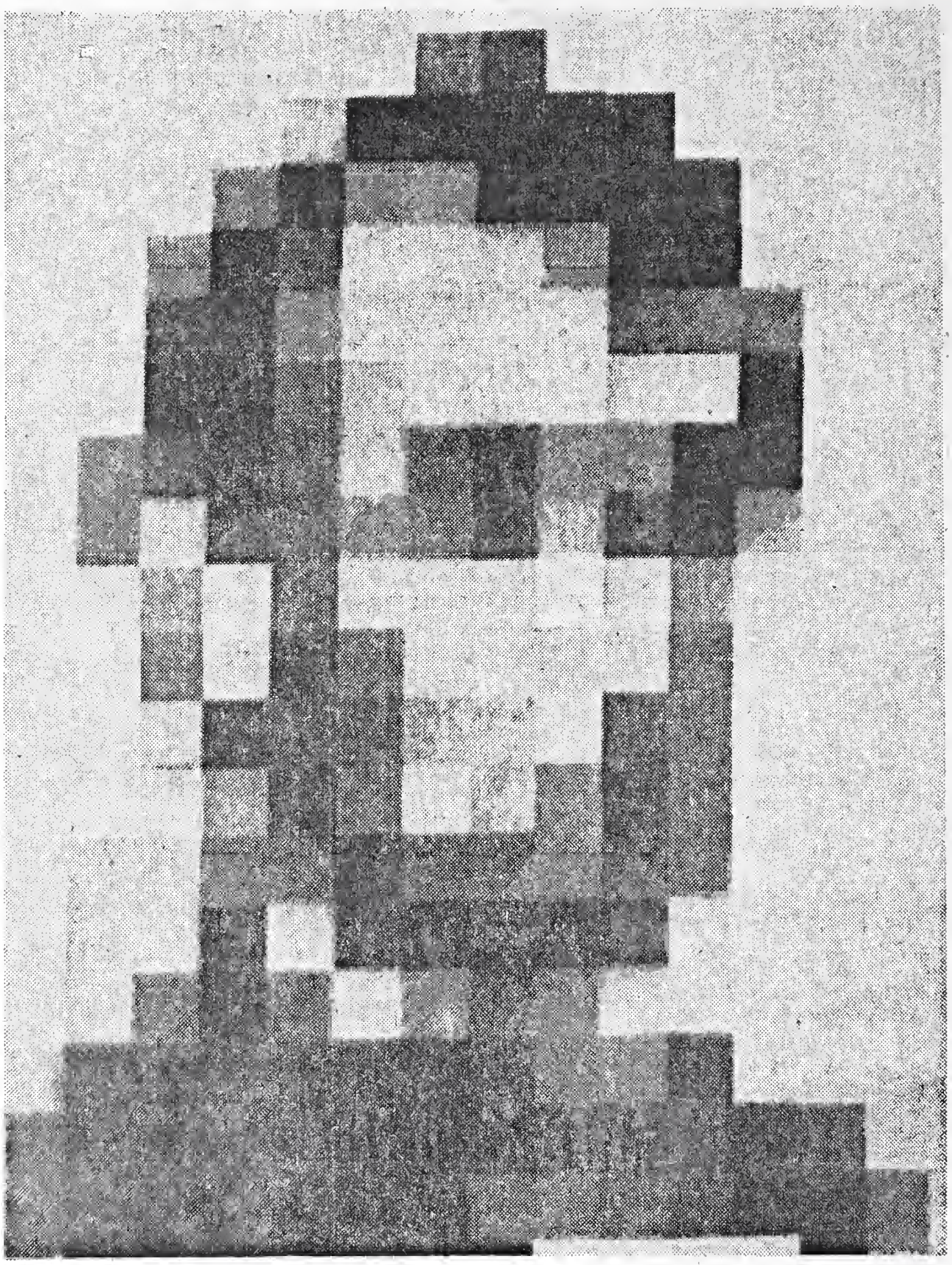
In connection with your recent item on optical illusions, maybe the students who wrote to you would like to see this interesting example. — R.W., Downers Grove



At first, we didn't know what you were talking about, and we pushed your example aside, shaking our heads. But, in so doing, everything became clear. And so, we think, will it be clear to readers if they hold this page at arm's length and maybe move it from side to side or squint at it.

The illusion, as we ascertained, its a test pattern being used by Bell Laboratories to determine the least amount of information a picture can have to be recognizable. The knowledge is sought as an aid in designing future Picturephone systems and devising techniques for computer storage of pictures. As you suggest, we are sending it to the students who wrote about an optical illusion project they are preparing for a school science exhibit.

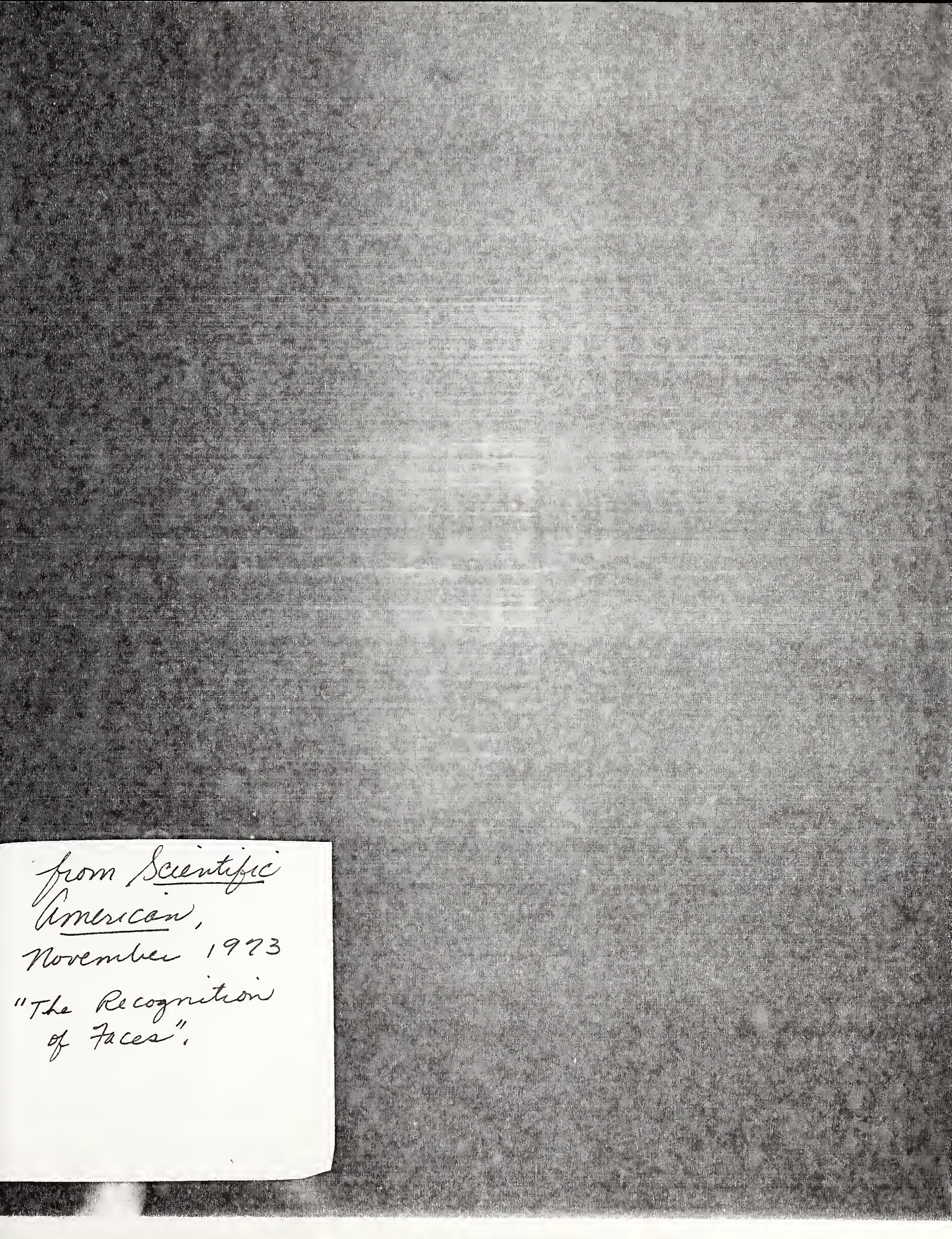
* * *



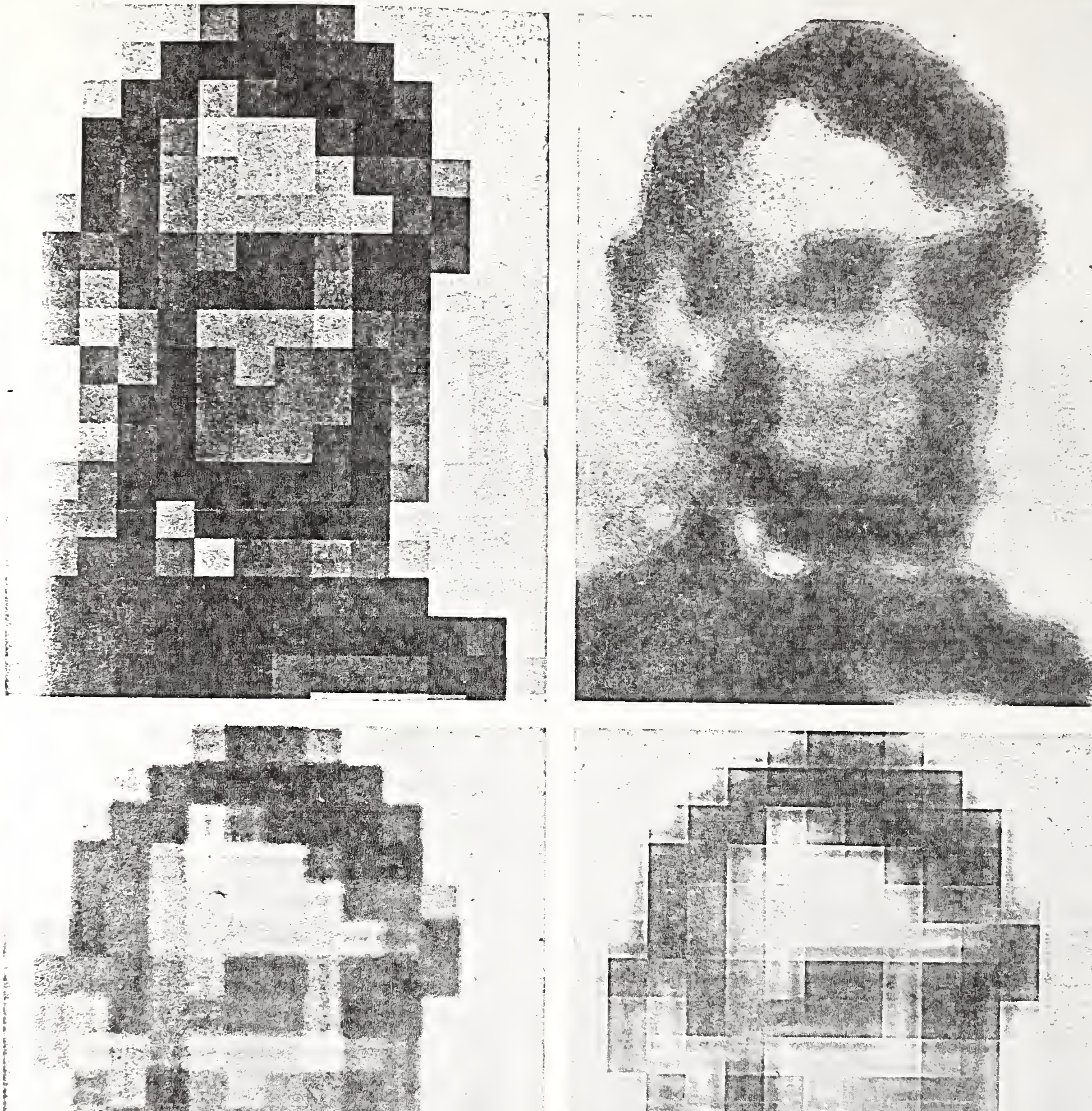
—AP

A PENNY FOR YOUR THOUGHTS

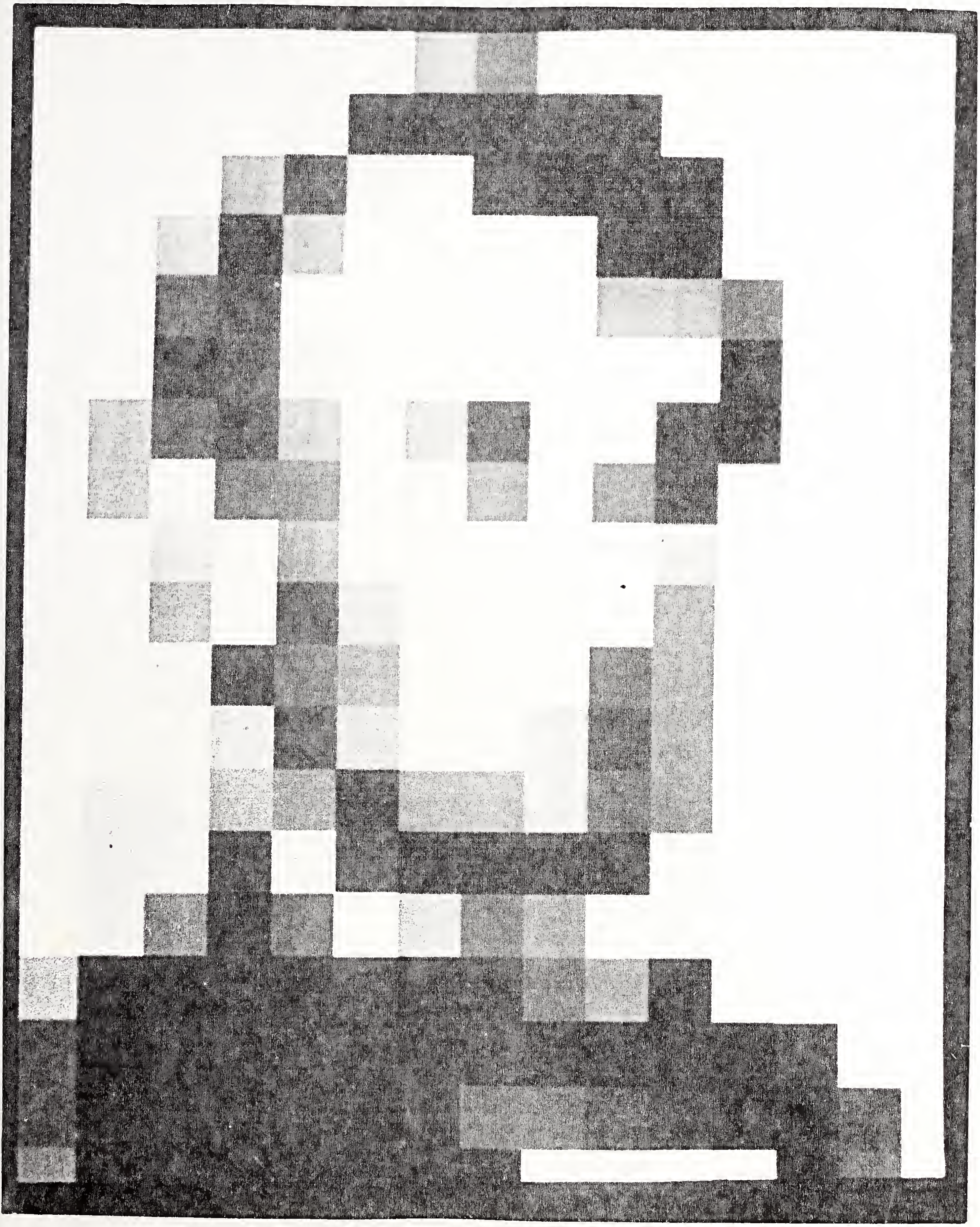
Try guessing whose face has been precisely blurred by a computer. This is part of an experiment by Leon Harmon at Bell Laboratories to learn the least amount of visual information a picture may contain, yet be recognizable. The picture is divided into about 200 squares, each an even tone from one of 16 shades of grey. If you don't recognize the portrait as that of Abraham Lincoln, try squinting at it from 15 feet away. Studies of the information content of a picture are under way to help Bell design Picturephone systems and techniques of computer picture storage.



from *Scientific American*,
November 1973
"The Recognition of Faces".



SELECTIVE FREQUENCY FILTERING influences the ease with which block portraits are recognized. The original block portrait of Abraham Lincoln is at top left. It consists of the photographic "signal," whose highest spatial frequency is 10 cycles per picture height, and noise frequencies extending above 10 cycles. As was anticipated, filtering out all spatial frequencies above 10 cycles (*top right*) greatly enhances recognition. Selective removal of only part of the noise spectrum, however, reveals which frequencies most effectively mask the image. At bottom left all frequencies above 40 cycles have been removed; even though the sharp edges of the squares are eliminated, perception is improved only slightly. When the two-octave band from 10 to 40 cycles is removed (*bottom right*), the face is more readily recognized. The phenomenon apparently responsible for this effect is critical-band masking.



[illegible] by Betty Debnam
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